

# Construction for Food and Beverage Facilities

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As the American Public becomes increasingly conscious of food safety issues, and as cleaner, and more sanitary facilities become the standard set by the food and beverage industry, it is critical that food plant construction professionals strictly adhere to the plans and specifications which are by the designers and engineers specializing in the food and consumer products industries.

There are numerous important design considerations which must be incorporated into the construction of food processing and handling facilities that contribute to providing optimum levels of sanitary conditions, and which minimize harborage and havens for insects, rodents, mold, mildew, bacteria and potentially harmful pathogens and contaminants.

These include site conditions and maintenance; landscaping considerations, - such as types and locations of grass and shrubs-; building components and construction techniques; positive drainage in plant wet areas; cleanable interior construction materials and surfaces; providing spaces between vertical utility elements and walls for accessibility for cleaning; controlling air pressure between various degrees of clean areas in order to prevent airborne contamination; air filtration media such as temporary filters on both return and supply air to prevent ductwork contamination during construction, as well as many other safeguards which need to be incorporated into the construction process as planned by the facilities designers, engineers and food safety professionals.

In achieving "clean construction" in a food plant, past experience plays a large part. Highly experienced food plant construction managers must lead the construction teams in the right direction. During the design process, the construction management team should formulate a project specific construction plan. The construction plan should address issues such as a project specific quality control program, a detailed project schedule, analysis for potential weather impact to sensitive construction operations and, construction sequence and constructability details. The project schedule as it develops will dictate measures to consider such as temporary weather protection, construction sequencing, etc. to assure installed construction is not exposed to and contaminated by and from outside elements.

Establishing work rules prior to construction operations sets the "food grade" level of expectation required of all construction workers. This is a small part of the overall GMP rules for design and construction that should comply with the actual Industry standards. These work rules should cover issues such as normal work hours, off limit areas to owner's operations and tie into coordination with the owner's already in place standards. Additionally, construction break areas, no smoking policies **proper clothing policies, and plant access from worksite policies should be part of every workers site specific orientation prior to their starting any work activities.**

Today, many projects are plant additions or modifications to existing facilities. It is critical that existing food plant operations are not affected by new construction at any time during the project. Operating plant GMP procedures must be implemented with complete coordination with plant management and operations staff. Weather and/or air tight full height barrier walls may need to be constructed. These separation walls may be as simple an approved reinforced poly curtain to a fully engineered air tight barrier wall capable of withstanding inclement weather including substantial winds. Careful pre-

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planning with engineers and owner's operations must take place to assure these barrier walls are in the right place and the right time to allow for complete plant operations 24 hours a day.

"Safety First" standards must be enforced throughout the project. A project specific safety program that meets OSHA and the owner's safety policies must be formulated before the start of construction operations, and should be a part of all construction contracts that will be a part of the project. A safety orientation for each construction worker should take place before any employee begins their first day of work on the project. Documented daily safety talks should be held prior to starting each work shift to discuss possible hazards that may be encountered and the required prevention and mitigation techniques. Biweekly and or weekly pre-planning safety meetings should be held and documented in order to assure that compliance to safety is being looked at on a supervisory level.

To ensure the highest quality of construction, a project specific quality assurance program must be written with complete "buy in" from all parties. The Q/A program covers plans, specifications, building codes, owner's specific requirements, inspection frequencies, inspections details and reports, on the spot corrections, and follow up actions. Experienced food plant contractors should have a standardized Q/A program that incorporates engineering requirements, and which will need only minor revisions to incorporate an individual owner's specific requirements.

By following these simple yet critical elements of Food Plant Construction, designers, engineers, construction professionals and owners can insure that they are constructing and implementing a safe and sustainable food plant which will serve its end users and the consumer public with the highest levels of plant and product sanitation and safety.

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